



Material Safety Data Sheet

IMA-jet® Injectable

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Arborjet, Inc.
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Winchester, MA 01890-1228

In Case of Emergency, Call:
CHEM-TEL 1-800-255-3924
Product information:
1-781-721-0795

Section 1: Product Identification

Product Trade Name:	IMA-jet	Product No.:
EPA Signal Word:	Warning	
Active Ingredient (% w/w):	Imidacloprid Technical (5%)	
Chemical Name:	BAY NTN 33893	
Chemical Class:	Insecticide	
EPA Registration Number:	74578-1	

Section 2: Composition/Information on Ingredients

Material:	CAS No.:	Percent:	Exposure Limits:
Imidacloprid*	138261-41-3	5.0%	Not Established
Preservative	26172-55-4, 2682-20-4	0.08%	2.25ppm (ACGIH/TLV)
Other**		>94.0%	Not Established

*Active Ingredient(s)

**Other ingredients are any substances other than an active ingredient contained in this product. Other ingredients are either non-hazardous or remain proprietary. Hazards that may be associated with other ingredients are addressed in this document.

Section 3: Hazards Identification

EMERGENCY OVERVIEW

WARNING

- HARMFUL IF SWALLOWED
- AVOID CONTACT WITH EYES, SKIN OR CLOTHING
- AVOID BREATHING MIST OR VAPOR

- KEEP OUT OF REACH OF CHILDREN

Symptoms of Acute Exposure:

Eye: This substance is not expected to cause prolonged or significant eye irritation. The extent of the injury will depend upon the amount and duration of contact, and the speed and thoroughness of the first aid treatment. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling.

Skin: This product is expected to cause slight skin irritation. The extent of the injury will depend upon the amount and duration of contact, and the speed and thoroughness of the first aid treatment. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling. It is not a skin sensitizer.

This product is not expected to cause allergic skin reactions.

Ingestion: This product has been shown to be harmful when ingested. The extent of the injury will depend upon the amount and duration of contact, and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects are described below.

Inhalation: This product may cause slight nasal irritation. Excessive exposure may cause dizziness, blurred vision, nausea, vomiting or headaches. The extent of the injury will depend upon the amount and duration of contact, and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects are described below.

Symptoms of Chronic Exposure: No specific symptoms of chronic exposure are known to occur in humans.

This product is not a listed carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), or the Occupational Safety and Health Administration (OSHA).

Teratology (Birth Defects) Information: There is no evidence that the active ingredient causes birth defects in humans.

Reproduction Information: There is no evidence that the active ingredient causes reproductive effects in humans.

Potentially Aggravated Condition: There are no specific medical conditions known that may be aggravated by exposure to this product.

Section 4: First Aid Measures

Eye Contact: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. If irritation persists, see a doctor.

Skin Contact: If on skin, wash with soap and water thoroughly. Remove contaminated clothing and wash separately.

Ingestion: If swallowed, drink 1 or 2 glasses of water (or milk) and induce vomiting by touching the back of the throat with finger. Contact a physician or Poison Control Center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take the poisoned individual and product container to the nearest emergency treatment center.

Inhalation: If inhaled, remove victim to fresh air. If not breathing, give artificial respiration preferably mouth-to-mouth.

Note to physician: There is no specific antidote available. Treat patient symptomatically. Moderately irritating to mucous membranes may contraindicate use of gastric lavage.

Section 5: Fire Fighting Measures

Fire and Explosion:

Flash Point:	165°F (74°C)	Method: NA
Auto ignition:	NA	
Flammable Limits (% in air):	Lower: 1.5	Upper: 9.7
Extinguishing Media:	CO ₂ , dry chemical, foam and water fog.	

NFPA Ratings: Health 1; Flammability 0; Reactivity 0; Special None;

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4) These values are obtained using professional judgment. Values were not available in the guidelines or published evaluations prepared by the national Fire Protection Association, NFPA.

Fire Fighting Instructions: Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

Hazardous Combustion Products: Normal combustion forms carbon dioxide and/or carbon monoxide.

Section 6: Accidental Release Measures

In Case of Spill or Leak: Control the spill or leak at the source. If product is leaking from a pressurized device, shut off the pressure to slow the source of the leak. Contain the spill to prevent it from spreading, contaminating soil, or entering sewage, drainage systems, or any body of water. For liquid spills, cover entire spill with absorbent material, and place into appropriate disposal container. Scrub area with hard water detergent (Tide, Joy, Spic and Span), and pick up wash liquid with additional absorbent material and place into appropriate disposal container. Contaminated absorbent and wash water should be disposed of according to local, state and federal regulations. If spill or leak gets on clothing, please read and observe precautions in Section 8: Exposure Controls/Personal Protection.

Section 7: Handling and Storage

For commercial and/or farm applications:

User must read and observe all precautions on the product label.

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Store the material in a well ventilated, secure area out of reach of children. Do not store food, beverages, or tobacco products in the material storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling. Do not apply to food-bearing plants. Keep children and pets away from treatment area until dry. Read entire label before using. Use strictly in accordance with label precautionary statements and directions. Do not apply to water bodies or allow runoff to contaminate aquatic sites.

Section 8: Exposure Controls/Personal Protection

For commercial and/or farm applications:

User must read and observe all precautions on the product label.

Eye Protection: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear. Splash goggles are recommended. Applicators should have an eyewash bottle available while injecting. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Skin Protection: Avoid prolonged or frequent skin contact with this material. Skin contact can be minimized by wearing protective clothing and gloves. Chemically resistant gloves should be worn at all times when handling this material. Wear chemical resistant gloves, such as polyethylene, butyl rubber, neoprene rubber or viton.

Respiratory Protection: No special respiratory protection is normally required. However, if operating conditions create airborne concentrations which exceed the recommended exposure standards the use of an approved respirator is required.

Ingestion Protection: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash hands with soap and water thoroughly after use to prevent possible ingestion of this product.

Section 9: Physical and Chemical Properties

Appearance:	Amber liquid
Odor:	Mild Aromatic Odor
Solubility:	Virtually complete
Melting Point:	NA
Boiling Point:	352°F (178°C)
Freezing Point:	-112°F (-80°C)
Specific Gravity:	1.07 g/mL
Evaporation:	NA
Vapor Pressure:	0.2 mmHg @ 68°F (20°C)
Density:	3.5 (air=1)
pH:	4.99 @ 77°F (25°C)

Section 10: Stability and Reactivity

Chemical Stability:	Product is stable at normal ambient temperature.
Conditions to Avoid:	None known.
Incompatibility (Materials to Avoid):	Oxidizers
Hazardous Decomposition Products:	Carbon dioxide and carbon monoxide
Hazardous Polymerization:	Polymerization not known to occur.

Section 11: Toxicology Information

Acute toxicity:

Eye Irritation:	Rabbit: exhibited minor irritation clearing within 48 hours.
Skin Irritation:	Rabbit: exhibited slight dermal irritation.
Dermal Toxicity:	24 hour male and female rat LD50 > 5000 mg/kg (Bayer)
Oral Toxicity:	Male and female rat LD50 > 1600 mg/kg (Bayer, Alfa Aesar).
Inhalation Toxicity:	LC50 dose is > 69 mg/m ³ by aerosol, and > 5323 mg/m ³ by dust. These values represent the maximum attainable airborne concentrations.

Skin sensitization: Guinea Pig: not a dermal sensitizer.

Sub-chronic Toxicity Studies: In a three week dermal toxicity study, rabbits were treated with the active ingredient, imidacloprid, at the limit dose level of 1000 mg/kg for 6 hours/day, 5 days/week.

Chronic Toxicity: A 2-year feeding study in rats fed up to 1,800 ppm resulted in a No Observable Effect Level (NOEL) of 100 ppm (5.7 mg/kg body weight in males and 7.6 mg/kg in females). Adverse effects included decreased body weight gain in females at 300 ppm, and increased thyroid lesions in males at 300 ppm and females at 900 ppm. A 1-year feeding study in dogs fed up to 2,500 ppm resulted in a NOEL of 1,250 ppm (41 mg/kg). Adverse effects included increased cholesterol levels in the blood, and some stress to the liver (measured by elevated liver cytochrome p-450 levels).

Reproductive Effects: A three generation reproduction study in rats fed up to 700 ppm imidacloprid resulted in a NOEL of 100 ppm (equivalent to 8 mg/kg/day) based on decreased pup body weight observed at the 250 ppm dose level.

Teratogenic Effects: A developmental toxicity study in rats given doses up to 100 ppm by gavage on days 6 to 16 of gestation resulted in a NOEL of 30 mg/kg/day (based on skeletal abnormalities observed at the next highest dose tested of 100 ppm). In a developmental toxicity study with rabbits given doses of imidacloprid by gavage during days 6 through 19 of gestation, resulted in a NOEL of 24 mg/kg/day based on decreased body weight and skeletal abnormalities observed at 72 mg/kg/day (highest dose tested).

Mutagenic Effects: Imidacloprid may be weakly mutagenic. In a battery of 23 laboratory mutagenicity assays, imidacloprid tested negative for mutagenic effects in all but two of the assays. It did test positive for causing changes in chromosomes in human lymphocytes, as well as testing positive for genotoxicity in Chinese hamster ovary cells.

Carcinogenic Effects: Imidacloprid is considered to be of minimal carcinogenic risk, and is thus categorized by EPA as a "Group E" carcinogen (evidence of noncarcinogenicity for humans). There were no carcinogenic effects in a 2-year carcinogenicity study in rats fed up to 1,800 ppm imidacloprid.

Organ Toxicity: In short-term feeding studies in rats, there were thyroid lesions associated with very high doses of imidacloprid.

Fate in Humans and Animals: Imidacloprid is quickly and almost completely absorbed from the gastrointestinal tract, and eliminated via urine and feces (70-80% and 20-30%, respectively, of the 96% of the parent compound administered within 48 hours). The most important metabolic steps include the degradation to 6-chloronicotinic acid, a compound that acts on the nervous system as described above. This compound may be conjugated with glycine and eliminated, or reduced to guanidine.

Section 12: Ecological Information

(Technical Grade of Active Ingredient Specific Information)

Summary of Ecological Effects:

Avian Toxicity: Imidacloprid is toxic to upland game birds. The LD50 is 152 mg/kg for bobwhite quail, and 31 mg/kg in Japanese quail. In studies with red-winged blackbirds and brown-headed cowbirds, it was observed that birds learned to avoid imidacloprid treated seeds after experiencing transitory gastrointestinal distress (retching) and ataxia (loss of coordination). It was concluded that the risk of dietary exposure to birds via treated seeds was minimal.

Aquatic Organism Toxicity: The toxicity of imidacloprid to fish is moderately low. The 96-hour LC50 of imidacloprid is 211 mg/l for rainbow trout, 280 mg/l for carp, and 237 mg/l for golden orfe. In tests with the aquatic invertebrate *Daphnia*, the 48-hour EC50 (effective concentration to cause toxicity in 50% of the test organisms) was 85 mg/l. Products containing imidacloprid may be very toxic to aquatic invertebrates.

Other Non-Target Organism Toxicity: NA

Section 13: Disposal Considerations

Applicators must dispose of any unused product as the label indicates.

Disposal Methods: Do not reuse original product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Section 14: Transport Information

DOT Shipping Name:	none
Technical Shipping Name:	Imidacloprid 5%
DOT Hazard Class:	Non-Regulated
DOT Identification Number:	None
Other information:	Combustible, flash point 84C. Keep away from food stuffs.

Section 15: Regulatory Information

Regulations Under FIFRA: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams, spills, misuse, or storage of large quantities of products containing hazardous or extremely hazardous substances.

Other U.S. Federal Regulations:**OSHA:** NA**CERCLA RQ:** NA**RCRA:** NA**SARA 311 CATEGORIES:**

- | | |
|---------------------------------------|-----|
| 1. Immediate (Acute) Health Effects: | YES |
| 2. Delayed (Chronic) Health Effects: | NO |
| 3. Fire Hazard: | NO |
| 4. Sudden Release of Pressure Hazard: | NO |
| 5. Reactivity Hazard: | NA |

This product is not listed as a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), or the Occupational Safety and Health Administration (OSHA).

State Regulations: Some state standards may be more strict than the federal government, therefore users should consult state or local authorities since this section cannot provide a complete list of all state regulations.

Section 16: Other Information

For any non-emergency questions about this product call: 1-781-721-0795

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**Technical grade imidacloprid toxicological and ecological information from
EXTOXNET**

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